

IN THE CLAIMS

1. (Currently amended) A method of operating an ingress entity of a packet-based network, comprising:

the ingress entity, including a processor, receiving a stream of voice data;

the processor passing the voice data through a processing stage, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

the ingress entity sending processed voice data across the packet network;

a detection unit detecting whether the received stream of voice data contains tandem free operation (TFO) information and, if TFO information is present, removing TFO information from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage,

the ingress entity sending the TFO information across the packet network without passing it through the processing stage;

the method further including the detection unit controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

2. (Original) A method according to claim 1 further comprising inserting the TFO information into packets for sending across the packet network.

3. (Original) A method according to claim 2 wherein the TFO information is carried in the same packets as the processed voice data.
4. (Original) A method according to claim 2 wherein the TFO information is carried in separate packets from the processed voice data.
5. (Original) A method according to claim 2 wherein the TFO information comprises TFO (IS) messages and TFO frames of coded voice data and wherein a common packet format is used to carry both types of TFO information.
6. (Original) A method according to claim 5 wherein the structure of the payload differs according to whether the packet contains TFO (IS) messages or TFO frames.
7. (Original) A method according to claim 2 wherein the packet comprises an indication of the quantity of TFO data carried within the packet.
8. (Original) A method according to claim 2 wherein the packets carrying TFO information further comprise information about the time alignment of the TFO information carried in the packet.
9. (Original) A method according to claim 8 wherein the processed voice data is carried across the packet network by a sequence packets which have include timestamp information and the packets carrying the TFO information share the same timestamp information.
10. (Cancelled)
11. (Original) A method according to claim 2 further comprising receiving information about the format of packets to be used to carry the TFO information during a call.
12. (Original) A method according to claim 1 further comprising receiving information about the capabilities of an egress entity of the packet network.

13. (Original) A method according to claim 12 wherein the information about the capabilities of an egress entity is received during call establishment.
14. (Original) A method according to claim 12 wherein the information comprises information about the buffering capabilities of the egress entity.
15. (Original) A method according to claim 14 wherein the information comprises information about the capabilities of the egress entity to buffer TFO frames in parallel with speech data.
16. (Original) A method according to claim 2 wherein the packets carrying TFO information are sent at regular intervals.
17. (Original) A method according to claim 1 wherein the TFO information comprises TFO frames of coded voice data and the method further comprises sending the TFO frames, in unprocessed form, in a channel which occupies less than 64kbit/s.
18. (Cancelled)
19. (Cancelled)
20. (Cancelled)
21. (Cancelled)
22. (Cancelled)
23. (Cancelled)
24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

28. (Cancelled)

30. (Cancelled)

31. (Cancelled)

32. (Cancelled)

33. (Currently amended) Apparatus for use at the ingress of a packet-based network comprising:

an input ~~for receiving~~ adapted to receive a stream of voice data;

a processor ~~for passing~~ adapted to pass the voice data through a processing stage, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

an output ~~for sending~~ adapted to send processed voice data across the packet network;

a detection unit ~~for detecting~~ adapted to detect whether the received stream of voice data contains tandem free operation (TFO) information and, if TFO information is present, ~~removing and remove~~ TFO information from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage,

~~the apparatus adapted to send~~ sending the TFO information across the packet network without passing it through the processing stage; and

a controller ~~for controlling~~ adapted to control removal of TFO information from the stream of voice data by the detection unit to ensure that the TFO information does not leak through to voice data wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

34. (Currently amended) Apparatus for use at the ingress of a packet-based network comprising:

an input ~~for receiving~~ adapted to receive a stream of voice data which contains tandem free operation (TFO) frames of coded voice data;

a processor ~~for passing~~ adapted to pass the voice data through a processing stage, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

a first output ~~for sending~~ adapted to send processed voice data across the packet network;

a detection unit ~~for detecting~~ adapted to detect the TFO frames and, if TFO frames are present, ~~removing and remove~~ TFO frames from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage;

a controller ~~for controlling~~ adapted to control removal of TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data; and,

a second output ~~for sending~~ adapted to send the TFO frames across the packet network in an unprocessed form via a channel which has a rate of less than 64kbit/s,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

35. (Cancelled)

36. (Currently amended) A non-transitory computer program product for implementing a method of operating an ingress entity of a packet network, the computer program product comprising computer-executable instructions embodied on a machine-readable storage medium, the computer-executable instructions causing the ingress entity to perform the steps of:

receiving a stream of voice data;

passing the voice data through a processing stage, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

sending processed voice data across the packet network;

detecting whether the received stream of voice data contains tandem free operation (TFO) information and, if TFO information is present, removing TFO information from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage, the ingress entity sending the TFO information across the packet network without passing it through the processing stage; further including controlling the step of removing TFO information from the stream of voice data to ensure that the TFO does not leak through to voice data,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to~~

~~the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

37. (Currently amended) A non-transitory computer program product for implementing a method of operating an ingress entity of a packet network, the computer program product comprising computer-executable instructions embodied on a machine-readable storage medium carrying the computer executable instructions causing the ingress entity to perform the steps of:

receiving a stream of voice data which contains tandem free operation (TFO) frames of coded voice data;

passing the voice data through a processing stage, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

sending processed voice data across the packet network;

detecting the TFO frames and, if TFO frames are present, removing TFO frames from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage;

controlling removal of TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data; and,

the ingress entity sending the TFO frames across the packet network in an unprocessed form via a channel which has a rate of less than 64Kbit/s,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

38. (Cancelled)

39. (Original) A telecommunications system comprising the ingress entity according to claim 33.

40. (Cancelled)

41. (Cancelled)

42. (Cancelled)

43. (Currently amended) Apparatus for use at the ingress of a packet-based network comprising:

an input responsive to a stream of voice data;

a processor adapted to pass the voice data through a processing stage which processes the voice data, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

an output from which processed voice data is sent across the packet network;

a detection unit which is arranged to detect whether the received stream of voice data contains tandem free operation (TFO) information and wherein the detection unit is further arranged, if TFO information is present, to remove the TFO information from the stream of voice data before the processor passes ~~passing~~ the voice data through the processing stage, the ingress entity sending ~~to send~~ the TFO information across the packet network without passing it through the processing stage, removal of TFO information from the stream of voice data being controlled to ensure that the TFO information does not leak through to voice data ,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the~~

~~voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

44. (Currently amended) Apparatus for use at the ingress of a packet-based network comprising:

an input responsive to a stream of voice data which contains tandem free operation (TFO) frames of coded voice data;

a processor adapted to pass the voice data through a processing stage which processes the voice data, the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data;

a detection unit which is arranged to detect whether the received stream of voice data contains tandem free operation (TFO) information and wherein the detection unit is further arranged, if TFO information is present, to remove the TFO information from the stream of voice data before ~~the processor passes~~ passing the voice data through the processing stage, removal of TFO information from the stream of voice data being controlled to ensure that the TFO information does not leak through to voice data; and,

a transmission unit which is arranged to sending the TFO frames across the packet network in an unprocessed form via a channel which has a rate of less than 64kbit/s,

wherein controlling the step of removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises the step of squelching TFO information in the stream of voice data.

~~the processing stage including one of the group comprising applying data compression to the voice data, applying echo cancellation to the voice data, applying G.711 log-law coding to the voice data, applying silence suppression to the voice data and applying DTMF digit relay to the voice data.~~

45. (Cancelled)

46. (Previously presented) A method according to claim 1 further comprising the step of recognising the synchronisation pattern of the TFO information and, wherein, the step of controlling removing TFO information from the stream of voice data to ensure that the TFO information does not leak through to voice data comprises monitoring the frame alignment of the TFO information and performing resynchronisation when the alignment of the TFO information slips.

47. (Cancelled)